*** NETANSWERS INTERNET EXTRA ***
*** Number 49: What's the Bandwidth, Kenneth? ***

Does your Net connection seem slow? Erratic? Sometimes it can be speedy; other times, agonizingly glacial? Without the right tools, it can be difficult to tell just how fast or slow your connection to the Internet really is. With a little help from a shareware diagnostic tool, you can get an accurate pulse of your Net connection's speed.

I've found two programs that do the job well, one for Windows and one for Macintosh. For Windows 95, 98 or NT 4.0, there's DU Meter. It's an elegant tool that displays a continuously updated graph of your bandwidth usage, showing your current, past and average connection speed, as you surf, download and do your thing online. (You can download the program and view screenshots at http://www.hagel.threadnet.com/dumeter/)

The equivalent program on the Mac is IPNetMonitor, a $20 shareware program. I've written about it before -- besides performing ping, traceroute and other diagnostic functions, IPNetMonitor provides a connection speed graph similar to DU Meter's. (The program is available at http://www.sustworks.com -- you can preview screenshots of its graphs at http://www.sustworks.com/products/ipnm/uipreview.html)

What good are these programs? They can give you clues or definite answers about the speed and quality of your Internet connection.

For instance, what if you bought a new modem that -- despite all its blinky lights -- doesn't tell your connection speed? It doesn't seem any faster than your old modem, so what are you to do? Launch a bandwidth measurement program and start downloading a large file from the Internet. You'll be able to see your average and best transmission and receive rates.

These programs will work fine even if you're not married to a modem: you can also use them to judge the speed of your office's Internet connection or check to see how fast your ISDN connection really is.

Reading the graphs can be a bit tricky. Just remember that kb means kilobits and KB means kilobytes. With a 56 kbps modem -- that's 56 thousand bits per second -- the graph might report a receive rate of 7 KBps -- seven thousand bytes per second. Since there are 8 bits per byte, some quick multiplication shows that the modem's speed is right on target.

Thanks to the compression techniques built into modern modems, it's not unusual for your modem appear to outstrip its maximum speed. When receiving text -- such as e-mail and HTML files, your modem speeds things up with compression. Graphics and file archives (such as ZIP files) are already highly compressed so won't be compressed much more by the modem. Compression makes the best use of your bandwidth -- and can make the speed graph appear to surpass your modem's true speed limit.

When you're browsing the web, downloading files and doing other typical online activities, you'll notice the speed reported by the graph can vary considerably from your modem's top speed. Many factors affect the speed that information

actually gets from out-there-on-the-Net to your computer. Things that can slow your connection include the load on the server you're getting the information from, general Internet congestion, and the amount of bandwidth your ISP has available.

If the graph shows that data from a particular site is just trickling in, chances are that server is temporarily overloaded. But if many or all sites are slower than they should be, the problem may be widespread Internet congestion -- in which case there's nothing you can do but try again later. If you constantly find that your Internet access is much slower than it should be, the problem may be insufficient bandwidth at your ISP.

With a good Internet service provider and a decent modem, most web surfing creates bandwidth graphs made up of short spikes (caused when you go to a new web page) followed by periods of nothingingness (while you read it). File transfers, which send or receive lots of data over a longer period of time, can give a better indication of the overall quality and speed of your Internet connection.

=*=*= SOFTWARE MENTIONED IN THIS ISSUE =*=*=

DU Meter: http://www.hagel.threadnet.com/dumeter

IPNetMonitor: http://www.sustworks.com

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Got comments or ideas for future issues? We want to hear 'em. Just send a message to savetz@compuserve.com (74774,2725).

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